



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,607	05/18/2004	Ping-Yang Chen	12590-US-PA	3606

31561 7590 08/02/2006

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

EXAMINER

WU, IVES J

ART UNIT PAPER NUMBER

1724

DATE MAILED: 08/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/709,607	Applicant(s) CHEN ET AL.	
	Examiner Ives Wu	Art Unit 1724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 12 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 5-11, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

(1). **Claims 1-4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Drori (US004642182) in view of Strauss (US005401404A).

As to a gas inlet, a gas outlet and a hollow interior in a pipe trap body in **independent claim 1**, Drori (US004642182) discloses multiple-disc type filters in a housing shown in Figure 3A, a liquid inlet 44, a liquid outlet 46 and hollow interior between the housing 30 and filtration unit 20.

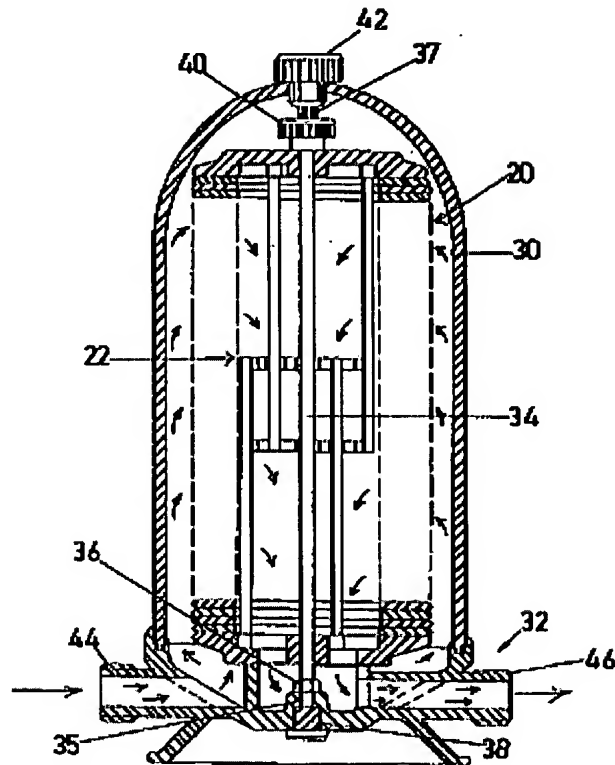


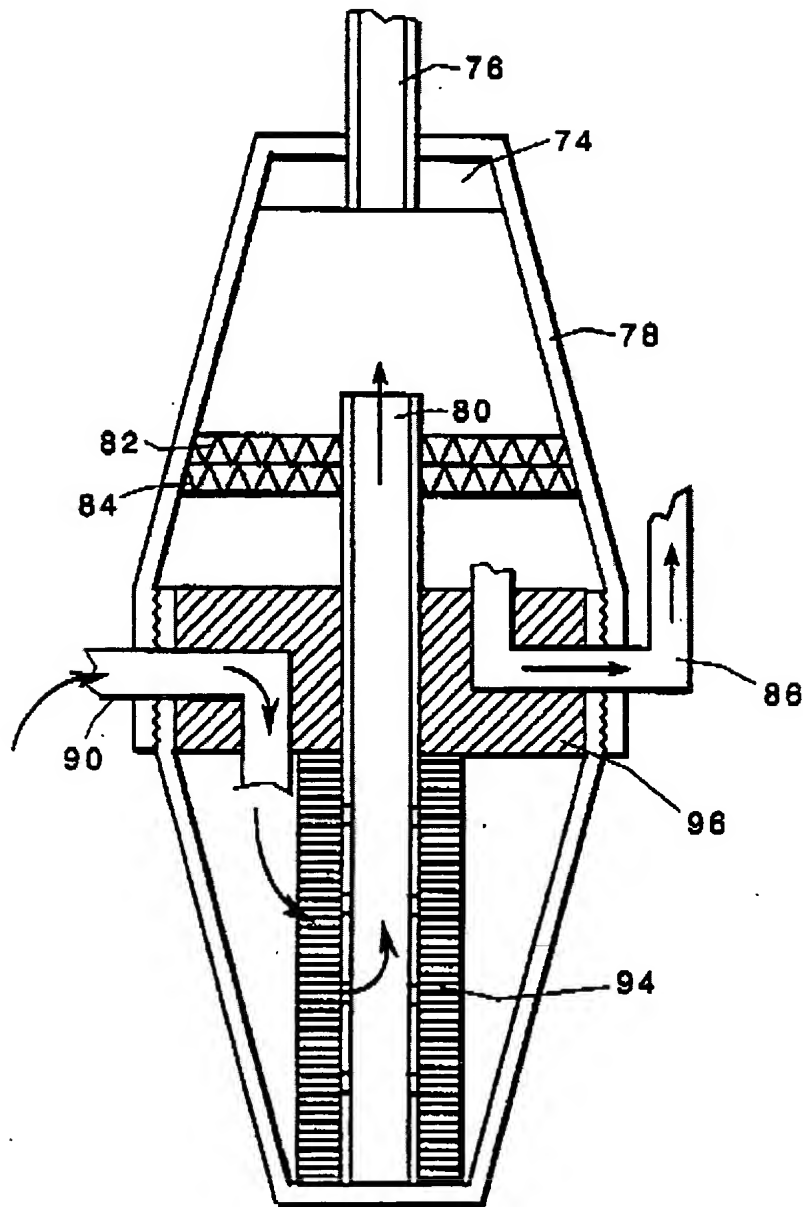
FIG 3A

As to a disc filter set up inside the pipe trap body in **independent claim 1**, Drori discloses multiple disc filter 20 in Figure 3A.

As to a pipe setup inside the pipe trap body with one end linked to the disc filter and the other end linked to the gas outlet, an area on the pipe facing the gas inlet in **independent claim 1**, Drori discloses in Figure 3A, (no number) a section facing the inlet 44 which connects to disc filtration unit 20 at one end, and its other end connects to the outlet 46.

As to a plurality of mesh filters set up inside the pipe in **independent claim 1**, Drori **does not teach** the mesh filters set up inside the pipe.

However, Strauss (US005401404) teaches the plastic mesh separator 82 and 84 in Figure 2 in the outlet.



**Figure 2**

The advantage of adding the mesh separator in the outlet area is to assist to further remove impurity such as oil in the patentee's application.

Therefore, it would have been obvious at time of the invention was made to install further mesh filters of Strauss in the outlet of housing disclosed by Drori in order to obtain the above-mentioned advantage.

As to the gaseous exhaust entering the pipe trap from inlet, passing through the outer wall of the pipe into the disc filter interior, and traveling through the mesh filters sequentially before emerging from pipe trap via the gas outlet in **independent claim 1**, Drori discloses in the Figure 2 by arrowing the directions of the flow that includes flow entering the pipe trap, passing through outer wall of the pipe into disc filter interior, and traveling through the mesh filters sequentially before the outlet when the teaching of Strauss is combined.

As to pipe trap for filtering gaseous exhaust in **independent claim 1**, the disclosure of prior art references meets the requirements of present claim in terms of apparatus and their setup, it is reasonable to presume that the housing of Drori would be made as a pipe trap device in light of their functional similarities of each unit as well as types, connections of each unit. Although it is disclosed in prior art references for filtering liquid system, it would also be useful for the fluid such as filtering gaseous exhaust because it is intended use and not to be considered as limitation and of no significance in the claim construction.

As to limitation of **claim 2**, Drori discloses the base 32, tube body set up on the base such as filtration unit 20 and respective end members, inlet 44, outlet 46 formed on the tube body in Figure 3A.

As to limitation of **claim 3**, Drori discloses the inlet 44 on one side of the housing 30, the outlet 46 is on the other side of the housing, also on the base surface of the housing in Figure 3A. Strauss also discloses outlet 76 on the top surface of the body in Figure 2.

As to limitation of **claim 4**, Drori discloses a central securing rod 34 in Figure 3A set up in the base 32 to mount all filters including mesh separator when the teaching of Strauss is combined.

As to limitation of **claim 15**, in the absence of showing the criticality of the records, the chosen distance 3 cm between gas inlet and pipe trap body would renders *pima facie* obviousness within one of ordinary skills in the art at time of invention in order to provide efficient separation. *In re Woodruff* 16 USPQ2d 1934.

As to limitation of **claim 16**, although Strauss does not disclose that different mesh size for 82 and 84 and decreasing mesh size toward the outlet in Figure 2, however, it is well known in the art to arrange the decreasing mesh size filters in the direction of output to get better separation. Therefore, it would have been obvious at time of the invention to put different mesh

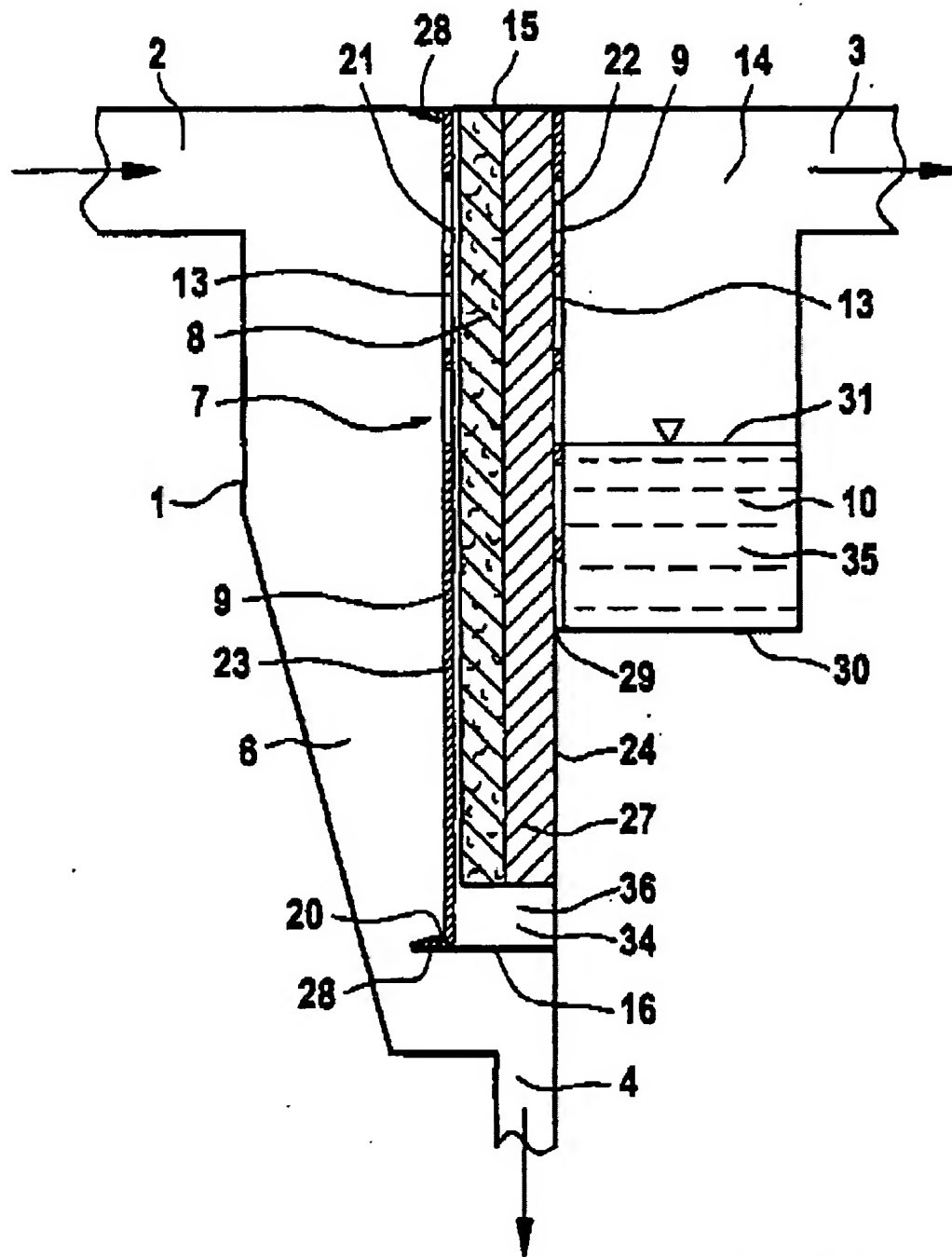
Art Unit: 1724

size filters taught by Strauss with decreasing size toward the outlet such as the mesh size of 82 to be smaller than the mesh size of 84 in the outlet of Drori in order to obtain the above-mentioned advantage.

(2). **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Drori (US004642182) in view of Strauss (US005401404A) further in view of Uhlenbrock (US006858051B2) and Lavery et al (US003413778).

As to planar surface of the pipe in claim 12, Drori and Strauss do not teach as claimed.

However, Uhlenbrock (US006858051B2) **teaches** the flat wall 7 in Figure 3 for a device of separating a fluid from a gas stream (Title).



**Fig. 3**

The advantage of using flag wall to face the inlet stream is to get greater momentum absorbed on the flat surface than circular surface based on well known concepts of geometry,



Art Unit: 1724

then to improve the opportunity for subsequent natural gravitational separation (Col. 3, line 14-18, Lavery et al – US003413778).

Therefore, it would have been obvious at time of the invention to use a planar surface of the pipe disclosed by Uhlenbrock for the pipe of Drori in order to acquire the better efficiency as above-mentioned.

(3). **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Drori (US004642182) in view of Strauss (US005401404A) further in view of Sprouse (US002929464).

As to mesh filters joined together to form a integrated unit by a plurality of fastening elements set up on the edges in claim 7, Drori and Strauss do not teach th integrated mesh filters unit as claimed.

However, Sprouse (US002929464) teaches the filter structure by laying several mesh screen such as 11,12,13,14 and 16 together to form a unit and fastened by suitable frame 17 in Figure 1 and 3,

The advantage of this filtering structure is to obtain higher degree of efficiency, that is removal of a greater amount of dust and foreign solids in the air or gas flow (Col. 1, line 21-25).

Therefore, it would have been obvious at time of invention to put mesh filters together as one unit disclosed by Sprouse for the mesh filtering units 82 and 84 in the outlet of Strauss, Drori's filter in order to obtain the above-mentioned advantage.

#### ***Allowable Subject Matter***

(4). **Claims 5-11 and 13-14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ives Wu whose telephone number is 571-272-4245. The examiner can normally be reached on 8:00 - 5:00.

Art Unit: 1724

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Ives Wu

Art Unit: 1724

Date: July 29, 2006

DUANE SMITH  
PRIMARY EXAMINER

D-  
7-31-06